

tonic in such cases. Should the case be complicated by diarrhœa, the diet should be bland and farinaceous, as arrowroot gruel, rice gruel, &c.; and the drinks mucilaginous, and an anodyne, as a dose of the sol. acet. morph. or of laudanum, should be given, and repeated *pro re nata*. In cases that prove refractory, it will become necessary to wean the child, and then a speedy cure will be enjoyed.

MONTICELLO, Florida, October 1st, 1842.

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ART. X.—*Case of death from extensive Intestinal and Peritoneal Inflammation, resulting from a perforation of the Intestinal Coats, occasioned by a Calculus lodged in the Appendix Vermiformis.* By J. F. PEEBLES, M. D., Petersburg, Virginia.

AT four o'clock, the morning of Sept. 4th, the present year, I was summoned in great haste to visit Thomas T. C——r, a journeyman potter, aged 52 years. On entering the apartment, his intensely anxious countenance, and shrunken features, at once announced to me that I had not been aroused so early unnecessarily. The patient was almost wild with agony. His pain was seated in the right iliac region, a little below the ileo-colic valve, and from thence it darted intensely down the penis to the orifice of the urethra, and along the rectum to the anus. I found his skin shrunken and cool, yet bathed in perspiration, his pulse small and quick, his tongue dry, and coated with a thick yellow crust. His thirst was very great, and his stomach was becoming irritable. His abdomen was not unusually tense, and no where was there the least tenderness on pressure, except over the seat of the pain, where he could not endure the slightest touch. He had slept well during the night, and only awoke half an hour before my arrival. He was, at the moment of waking, conscious of a feeling of great sickness and prostration, and before a person beside him in bed, to whom he had spoken for the purpose, could strike a light, these feelings suddenly subsided, to be replaced by the pain.

On inquiring into the history of the attack, I learned that on the Friday previous, when he returned at evening from the pottery, he had expressed himself as feeling unusually bad. To use his words, he had, during the day tried alternately both shade and sunshine, to see if he could not free himself from his unaccountably strange and uneasy feelings. He ate his supper however as usual, and it was only when he had fallen asleep on the sofa afterwards, that his landlady, from his breathing, perceived that he was indisposed. His fever continued to rise, and at bed-time he took twelve grains of calomel. By the morning the fever had subsided in a great degree, and after taking a purgative of castor oil and spirits of turpentine, he dressed himself and walked out. At 9 A. M. he was seized with rigor, followed by high reaction, and he was delirious a greater portion of the day. The calomel and oil not operating, he took occasional doses of Epsom salts as the fever advanced. As the evening approached the fever left him, however, and thinking it only an intermittent, to which he was subject, he took ten grains of quinine in pills during the evening, and, as before mentioned, slept well until awoke by the sickness and pain. The medicines he had taken had produced but two slight

evacuations; his urine was scant and very high coloured, and whilst there was a frequent desire for its discharge, it was voided with some difficulty. My first impression was that nothing else could produce symptoms so suddenly urgent and distressing, and at once I instituted inquiry as to the existence of stricture in some portion of the intestinal tube. The patient had inguinal hernia, an unusually large protrusion, but it was reducible, and when reduced, the ring could plainly be felt throughout by the finger. There could then be no strangulation of the intestine, and to fulfil the indications, together with the warm bath, and fomentations applied to the seat of pain from time to time, three pills, made according to the following formula, were ordered to be taken immediately, to be followed by the remainder in two hours, should not the first produce relief:—Hydrarg. submur.  $\mathfrak{z}i.$ , pulv. g. camph. gr. viii., pulv. g. opii, gr. ii.; m. fiant pilulæ vi. æqual. I saw him again in six hours. There was now reaction, and his skin was hot and dry. The first dose of pills had produced relief, with great drowsiness, from which the slightest touch would awake him with a start, and during which there was continued twitching of the tendons. There was no pain in the right groin, but the soreness was so great that he could not bear the slightest touch or the least motion. The thirst had not abated, and the irritability of the stomach had increased. The tenderness was now extended over towards the right groin. His bowels had not been opened, the injections which had been administered being still retained. Although reaction seemed completely established, his pulse was thready and compressible. Venesection being impracticable, thirty leeches were ordered to be immediately applied over the tender region. The application of a sinapism composed his stomach, and he was enabled to retain a dose of castor oil.

When seen again in the evening, he had had several dark and highly fœtid evacuations, and there was evident relief. The tension of the bowels had diminished, and there was not so much tenderness on pressure. His fever had subsided, and with it the subsultus and drowsiness, whilst his skin gave out a warm perspiration. His thirst had left him, and with it much of the irritability of his stomach. In short, the patient seemed amended in every way, and was comparatively quite comfortable. Fearing a return of the chill in the morning, corresponding to the one which had seized him on the morning previous, he was ordered to take twelve grains of quinine at bedtime.

*Monday.* Summoned again at 4 o'clock. I found the patient labouring under symptoms precisely similar to those of the previous morning; if possible, his agony was greater; as then, he had slept well until awoke at that hour by his suffering. The pain had extended, and now occupied both the right and left iliac regions, over which space the abdomen, without being much distended, was tense and firm, and so extremely sensitive, as not to endure the slightest touch. It darted down most excruciatingly to the anus and orifice of the urethra, and the penis was contracted marvellously, and firm and rigid to the touch. His desire for cold drinks was extremely urgent, and, such was the irritability of his stomach, they were ejected almost the instant they were swallowed. The warm bath relieved the intensity of his sufferings for an instant, and he retained three pills similar to those prescribed on the previous morning. Ordered thirty leeches to be immediately applied, extending over the right and left iliac regions. 10, A.M. The leeches had just been removed when I called. Perspiration had just broken out, and the patient had fallen into a slumber. His pulse continued sharp, but extremely compressible. His repose was only momentary, and when he awoke, I found the symptoms wholly unabated. Several injections had been given without open-

ing his bowels, and the abdominal tension had greatly increased, as had also the tenderness and pain. His thirst had continued, and the vomiting was incessant, and for the first time there was now some slight indications of stercoraceous matter sinking in the bottom of the vessel. The condition of the man was in the highest degree alarming, and the treatment having fallen so far short of relief, a consultation was requested. Whilst a note was being written for aid, the patient, getting up to stool, voided a copious and extremely offensive slate-coloured evacuation. The most urgent symptoms at once subsided, and he expressed himself so much relieved, that the order for consultation was countermanded. He was enabled to retain an oleaginous emulsion, which by the evening produced five copious discharges, similar in character to the previous one. The pain had then subsided, and the tension of the bowels was diminished, although not so much as might have been looked for after such free catharsis; the seat of the pain still remained firm to the touch, and presented the peculiarity, that whilst he could not endure over it the slightest percussion, pressure gradually increased could be borne to an almost unlimited extent. His thirst was not troublesome, and the vomiting had almost entirely ceased. A full anodyne was ordered to be given at 3 A. M., so as to break the apparent intermittent recurrence of the attack at 4 every morning, and he was left for the night.

*Tuesday, 7½ A. M.* Although he had not slept much, he had had a more comfortable night than he had enjoyed since his illness. He was engaged in cheerful conversation, and expressed himself much better. The tension, pain, and soreness of the bowels were still relieved in a great degree, yet my hopes for his safety were much shaken by learning that he had occasionally been troubled with hiccough during the night, and moreover, by the continuance of the thirst and vomiting, which had rather increased since the previous evening. To relieve these, a large blister was ordered to the epigastrium. His pulse being still sharp, and more tense than it had been, leeches were again ordered to the right iliac region. 1½, P. M. The symptoms had become greatly aggravated in every respect, and the condition of the man, so long doubtful, had now become unequivocally hopeless. The pain, soreness, and tension, was extended over the entire abdomen (the greatest suffering being now in the hypogastric regions), and the torture of the man was beyond description. With a constant desire for cold drinks, there was incessant vomiting of the fluid, mixed with stercoraceous matter; and superadded to this, hiccough had returned, at shorter intervals, to the inexpressible torment of the poor man. His skin was bathed in warm perspiration, the pulse had lost some of its sharpness, whilst its beat was quicker, and the artery, during its inactivity, seemed more filled than it had previously been. The patient, in entreating to be bled, informed me that he had, twelve years previous, been relieved of a similar attack which had seized him in the city of Troy, N. Y., by his physician's bleeding him to fainting. It was totally impracticable, and morphine was administered, and the blister extended over the abdomen. 7, P. M. Visited Mr. C——r in consultation with Dr. Robinson. It was the latter's opinion that the treatment would have relieved the man, had not there been some local cause to produce the inflammation, and since it had not, it, in his opinion, strengthened my first impression, that there was stricture in the hernial ring. After another minute examination, this could not be found to exist, and nothing was left us but to relieve the tension by speedily opening the bowels. Croton oil was ordered, but the patient could not retain the dose, and after a night of exquisite torture, he sank and expired, at a few minutes past four on Wednesday morning.

*Autopsy*.—A hasty examination was permitted us, and seven hours after death, kindly assisted by Dr. Spencer, it was made in the presence of Dr. Robinson. The external appearance of the abdomen was not unusual. The distension was scarcely perceptible, yet its walls were uncommonly firm and unyielding to pressure. On exposing its cavity, the viscera, as well as their peritoneal covering, were found so highly injected, as to be of a dark purple hue, and throughout covered with coagulable lymph. The omentum was most unnaturally thickened, and on its surface were several sphacelated spots of considerable extent, having around them a more greenish appearance. There was an unusual absence of serous fluid, but when the omentum was raised, floating amid the intestinal convolutions, several ounces of pure pus were discovered. Although the bowels were nearly entirely void of contents, yet so highly were their coats injected, that they communicated a feeling of great firmness to the touch, and this, together with the unnatural thickness of the omentum, at once accounted for the firmness on pressure over the abdomen, which existed the last twenty-four hours of the man's illness. The intestine was traced carefully down; no stricture was found to exist, and the hernial ring was perfectly free from any appearance of inflammation. Passing the finger below this, in the iliac fossa, it came, near the rim of the pelvis, in contact with a solid body. It was ascertained to be in the appendix vermiformis, fully three inches from its junction with the cæcum, and which, without being unnaturally prolonged, was very much enlarged, at the point, to more than an inch in diameter. A perforation the size of a crow quill was discovered at the side of this enlargement, from which, as it was raised, several drops of pure pus dripped away. The large hernial protrusion, together with the weight of the calculus, (for such it was ascertained to be by an examination through the perforation,) had displaced the appendix from its usual position in the body, by drawing it down to the rim of the pelvis, and when discovered, the calculus rested against the lower and left side of the fundus of the bladder inferiorly, superiorly it lay against a fold of the small intestine. It was on this side that the perforation existed; it opened against the small intestine, which for more than an inch above and below, was in a state of sphacelation. Here was evidently the point from which the inflammation diverged, and the surrounding organs, involving the ileum, the ileo-colic valve, the cæcum, the descending and transverse colon, the rectum, from its sigmoid flexure to the verge of the anus, and the fundus of the bladder, were all deeply injected, covered with gangrenous spots, and loaded with coagulable lymph. The bladder was partially distended with urine, and its coats unnaturally thickened. Tracing the ileum from its junction with the cæcum upwards, the degree of inflammation gradually lessened, although the duodenum and the peritoneal covering of the stomach were both highly inflamed. The mucous membrane of the stomach was but slightly injected; the organ was distended, and it contained an injection which had been administered several hours before death. The spleen was enormously distended. The liver was also much enlarged. The gall-bladder was partially filled with apparently healthy bile.

The calculus belonged to the mulberry class; it was nearly circular, more than an inch in diameter through its widest portion, with a very irregular surface. Surrounding it, lodged in the interstices, were a number of tomato seed, and several of those of the currant, some of which had evidently remained there for a length of time, since they were partially incruised with the calcareous matter. On sawing into it, after passing through a thin but firm

crust of stone, the saw suddenly sunk into a soft substance. On laying it entirely open, the calculus was found to be a thin incrustation, filled with a fawn-coloured and dried matter, light and spongy to the touch; it had evidently been some organic substance, and containing, as it did, several particles made up of distinct fibres, which were perceptibly elastic, the inference is fair that it was of animal origin, perhaps a bit of beef which, defying the powers of mastication, had become accidentally lodged in the appendix, and thus, in the course of time, incrustated. This substance was easily scooped out, and when removed, the cavity left plainly proved that it had been the nucleus, for the crust of stone being of the same thickness throughout, its shape was found to have entirely determined the external conformation of the stone.

It would seem that there was some discrepancy between the appearances on dissection and the general course of the symptoms of the above case. It is evident that the work of inflammation was progressive and unceasing from the first moment of the attack until death supervened; the relief, therefore, that the patient experienced from time to time, is to be attributed to the partial subsidence of the vascular turgescence, the result of the leeching, and the free catharsis, which for the time suspended the tension and pain. The apparent intermittent recurrence of the attack for two successive mornings, preceded, also, by a marked rigor and reaction on the forenoon of the previous day, whilst at the time it had some weight in determining the diagnosis of the case, (since, by the subsidence of the symptoms towards the close of both days, in a great degree, it had some of the characters of intermittent fever in a masked form, a disease which was extensively prevailing in the neighbourhood,) it was to be rather attributed to accidental coincidence, arising from the fact, that the impression produced by the remedies employed so happened to subside at that hour, to leave the disease to its natural course.

There are many interesting cases of calculi in the intestinal canal recorded in the books and journals, some of them, indeed, so remarkable, as to be perpetuated in every treatise that has yet appeared on this subject; but we have not met with an account of a calculus such as above described being found in the *appendicula vermiformis*, and the case is therefore unique and interesting.

Cases are not wanting, however, of disease resulting from the lodgment of foreign bodies in the *appendix vermiformis*. Acute inflammation of the *cæcum*, terminating, if not relieved, in perforation of the intestine, or the formation of an abscess in the *iliac fossa*, it has been shown repeatedly, may result from the presence of foreign bodies, such as fruit stones, undigested food, or other concretions, lodged in the folds of that intestine or its appendix. An interesting case of a pin passing from the appendix to the bladder, has been recently reported by an English physician. It cannot be uninteresting, whilst upon this subject, to mention a case of this nature, related to me by the sufferer, himself a distinguished physician. He had been for years subject to violent attacks of pain in the right groin, which subjected him to great annoyance. On one occasion the pain, which was confined to a spot over the *ileo-colic valve*, which could have been covered by a dollar, continued without the slightest intermission for several weeks. After taking many active purgatives without a moment's relief from their operations, he found the pain suddenly and permanently suspended by a free evacuation, the result of an oleaginous emulsion with turpentine. The relief was so sudden and so marked, as to fix the impression on his mind that the discharge

had brought away the offending cause. An examination was made, and the seed of several small fruit and a number of those of the tomato, were discovered in the vessel. Some time after this, and subsequent to another attack, an abscess, which had been slowly but steadily forming for several weeks, burst outwards over the left groin, and in its discharge there again appeared traces of tomato seed. It healed kindly, and from that time, although several years have elapsed, there has been no return of his disease, and the probability is, that adhesions have formed in the intestine, in such a manner as to exclude the entrance of foreign bodies from the appendix.

The origin of the calculus in the present case was undoubtedly a fragment of undigested food, lodged by accident in the appendix; and since the patient had been subject to pain in that region from time to time, ever since his first attack, occurring twelve years previous to his death, which was so violent as to require the most energetic treatment to subdue it, it is not unreasonable to infer that this lodgment occurred at that time. That it should have become coated with calcareous matter, instead of at once, as in other cases, creating irritation and steadily progressing to a serious issue, is an interesting question. Without attempting to account for this fact, it may not be uninteresting to notice, that the presence of stones in the alimentary canals of the inferior animals, whilst it is more common than in the human subject, is more frequent in those of a particular class. And they are peculiar in this respect, from their habits, the complexity of their organs, the length of the intestines in proportion to their bodies, and the nature of their food, it remains for a length of time in their intestines, in a state of partial inaction, thus giving ample time for the agglutination of its more solid portions, and the ultimate formation of calculus on these concretions. These stones, whatever may be their external nature, have invariably for a nucleus some solid substance which had been taken into the stomach as food. These facts furnish a striking analogy with the case before us, where the foreign substance, from its position, was immovable.

Whatever may have been the history of the calculary formation, the perforation, the immediate cause of death, so far from being the immediate result of either its irritation, or the distension of the intestinal coats, (for they were sound except around the opening—the coats of the appendix had evidently distended to accommodate the body, and were in a natural state,) was, it is probable, the result of an effort of nature to free the system from the foreign body by throwing it into the ileum, against which, we have before shown, it lay. The fold of this intestine, against which it was lying, although sphacelated, was much thickened, and densely covered with coagulable lymph, proving that there had been an attempt towards adhesion, which had been interrupted. This fold of the ileum belonged to that portion of the intestine which formed the hernial protrusion; this protrusion invariably occurred when the patient was without his truss, at the slightest exertion; he did not wear the instrument at night, hence it was liable to occur frequently during that period, and in its probable motion during protrusion, we think may be explained this fatal interruption to the adhesive process.

The case, therefore, we think, was unfavorably complicated by the existence of hernia, for had there not been such displacement of the organ, its contiguity would have led to the formation of adhesions, and the calculus would doubtlessly have been thrown into the cæcum, from whence it would have found an easy exit from the body; as it was, had it found its way into the ileum, from its size, it is highly probable it would have found such difficult passage as to occasion equally severe, if not fatal effects.